CLAIMS

1. A method for electrically coupling digital devices, the method comprising the steps of:

generating a first device supply voltage at a first digital device; and

varying the first device supply voltage to match a logic voltage used by logic circuits at a second digital device in communication with the first digital device.

2. The method of claim 1 wherein varying the first device supply voltage comprises the step of providing the supply voltage at an interface node coupled to the second digital device until a second device supply voltage at the interface node exceeds the supply voltage.

3. The method of claim 2 further comprising the steps of operating data circuits at the first digital device for data interchange with the second digital device in response to the greater of the first device supply voltage and the second device supply voltage.

4. The method of claim 3 further comprising the steps of:

producing logic levels at the data circuits at the first digital device; and

varying the logic levels in response to varying the first device supply voltage.

5. The method of claim 1 further comprising the step of communicating digital data using digital signals between the first digital device and the second digital device.

6. The method of claim 5 wherein communicating digital data comprises, at the first digital device, developing voltages corresponding to digital logic levels in response to the first device supply voltage.

7. Apparatus for electrically coupling a first digital device and a second digital device, the apparatus comprising:

an interface circuit at the first digital device coupled at an interface node to the second digital device, the interface circuit configured to provide a first device supply voltage to the interface node until a second device supply voltage at the interface node exceeds the first device supply voltage;

a data circuit at the first digital device coupled to the interface node, the data circuit responsive to voltage on the interface node for providing digital logic signals at appropriate voltage levels to the second digital device.

8. The apparatus of claim 7 wherein the data circuit provides the appropriate voltage levels in response to the higher of the first device supply voltage and the second device supply voltage.

9. The apparatus of claim 7 wherein the interface circuit is inactivated when the second device supply voltage exceeds the first device supply voltage.

10. The apparatus of claim 9 wherein the interface circuit includes a transistor coupled to the interface node for providing drive current to the interface node at the first device supply voltage, the transistor being substantially turned off when the second device supply voltage at the interface node exceeds the first device supply voltage.

11. A communication device comprising:

a radiotelephone including:

one or more data circuits powered from an interface node;

an interface circuit configured to provide a first device supply voltage to the interface node while a second device supply voltage does not exceed the first device supply voltage; and

a modem circuit coupled to the interface node and configured to supply the second device supply voltage to the interface node, the modem circuit including:

one or more logic circuits configured to exchange digital data with the one or more data circuits, the one or more logic circuits and the one or more data circuits communicating with voltage levels that vary with voltage on the interface node.

12. The communication device of claim 11 wherein the radiotelephone further includes first operating circuitry operable at a first operating voltage and the modem circuit further includes second operating circuitry operable at the second device supply voltage, the second device supply voltage differing from the first operating voltage.

13. The communication device of claim 11 wherein the one or more data circuits are configured to convert voltage levels for communication with the one or more logic circuits to voltage levels for communication with the first operating circuitry.

14. A radiotelephone comprising:

radio circuitry for radio frequency communication with a remote radio device;

a controller coupled to the radio circuitry for controlling operation of the radiotelephone;

a data circuit for communicating digital data with a detachable modem circuit, the data circuit being responsive to a supply voltage on an interface node for providing output digital signals to the modem circuit and receiving input digital signals from the modem circuit, the input digital signals and the output digital signals at voltage levels suitable for communication with the modem circuit; and

an interface circuit coupled to the interface node, the interface circuit configured to provide the supply voltage to match the output digital signals to logic voltages used by logic circuits of the modem circuit.

15. The radiotelephone of claim 14 wherein the interface circuit is configured to provide the supply voltage to the interface node unless the modem circuit supplies a larger voltage to the interface node.

16. The radiotelephone of claim 15 wherein the interface circuit comprises a voltage regulator having an output coupled to the interface node and configured to provide a regulated voltage to the output node as the supply voltage.

17. The radiotelephone of claim 16 wherein the voltage regulator is configured to tolerate an over-voltage condition at the output.

18. The radiotelephone of claim 17 wherein the voltage regulator comprises an output transistor coupled to the output, the output transistor being substantially turned off in response to the over-voltage condition.

19. A data interchange method for exchanging digital data between two or more digital devices requiring differing operating voltages, the method comprising the steps of:

at a first digital device, providing to data circuits a supply voltage substantially equal to a first operating voltage of the first digital device, the data circuits being configured for exchanging data with a second digital device;

when the second digital device requires a second operating voltage greater than the first operating voltage, providing the second operating voltage to the data circuits so the data circuits send and receive voltage levels suitable for communication with the second digital device.

20. The data interchange method of claim 19 further comprising the steps of:

coupling the first digital device and the second digital device over a common interface node;

powering the data circuits from a voltage on the interface node;

at the data circuits, developing the voltage levels for communication with the second digital device in response to the voltage on the interface node; and

providing the first operating voltage to the interface node from the first digital device until the second operating voltage on the interface node from the second digital device exceeds the first operating voltage.